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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,781	04/09/2004	Stefan Barkaro	5497-110	1454
57579      7590      06/24/2008 COATS & BENNETT/INFINEON TECHNOLOGIES 1400 CRESCENT GREEN SUITE 300 CARY, NC 27518				
EXAMINER SINGH, RAMNANDAN P				
ART UNIT		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/821,781

**Applicant(s)**

BARKARO ET AL.

**Examiner**

Ramnandan Singh

**Art Unit**

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 January 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-10 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date Apr 09, 2004  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(o) because they do not provide the legends explaining the reference numerals used in the figures. See MPEP § 608.02 (V). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 1-2, 6, 10 are objected to because of the following informalities:

Claim 1 recites the limitation "a line driver/receiver" in line 1. It is unclear whether it refers to driver or receiver or both. A similar thing holds for claims 2, 6 and 10.

Appropriate correction is required.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection

based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claim 1 is rovisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 11/170,395. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 is a broad version of claim 8 of the co-pending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 102***

6. The foowing is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Stewart [US 3,904,838].

Regarding claim 1, Stewart discloses, in a line driver and receiver circuit, as shown in Fig. 2, where the line driver is connected with its output terminals to a load (188) for supplying a transmit signal thereto and where the receiver is connected with its input terminals to the load for simultaneously receiving a receive signal therefrom, an arrangement for canceling the transmit signal on the input terminals of the receiver, the output terminals of the line driver being connected to the load via equal first impedances, the input terminals of the receiver being connected to the load via equal first resistors and to respective output terminal of the line driver via equal second resistors,

wherein the first impedances are complex impedances to match the load impedance and are of an impedance value that is much smaller than the impedance value of the load impedance, and transconductance amplifiers (150, 152) are provided to sense the voltage across the first impedances and supply corresponding currents to respective input terminal of the line driver [Fig. 2; col. 4, line 57 to col. 5, line 24].

Regarding claim 3, Stewart discloses an echo canceling arrangement, as shown in Fig. 2, comprising:

a line driver having two inputs and two outputs [Fig. 2], a load (188) coupled with the outputs of the line driver via first and second impedances, a line receiver having two inputs, wherein the inputs are coupled through a network with the load and the outputs of said line driver, first and second transconductance amplifiers having two inputs and an output, wherein the inputs of the first transductance amplifier (150 152) are coupled with the first impedance and its output with the one input of the line driver and the inputs of the second transductance amplifier are coupled with the second impedance and its output with the other input of the line driver [Fig. 2], wherein the first impedances are complex impedances to match the load impedance and are of an impedance value that is much smaller than the impedance value of the load impedance [Fig. 2; col. 4, line 57 to col. 5, line 24].

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thilenius [US 20030031139 A1] in view of Hjartarson et al [US 6,295,343 B1].

Regarding claim 7, Thilenius discloses an asymmetric digital subscriber line (ADSL) driver receiver circuit (10), as shown in Fig. 1, comprising: an ADSL driver (105) having two inputs and two outputs, a load (130) coupled with the outputs of the driver via first and second impedances [Fig. 1], an ADSL receiver having two inputs, wherein the inputs are coupled through a network with the load and the outputs of said driver, output with the other input of the driver, wherein the first impedances are complex impedances to match the load impedance and are of an impedance value that is much smaller than the impedance value of the load impedance [Figs. 1, 5; Para: 0011-0046; 0001-0002].



Thilenius does not teach expressly using two transductance amplifiers.

Hijartarson et al teach using two amplifiers (407) to amplify signals [Figs. 6, 7, 8; col. 5, line 66 to col. 7, line 28].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Hijartarson et al with Thilenius in order to amplify weak signals received at the receivers

Regarding claim 8, Thilenius teaches the circuit, wherein the network comprises: a first resistor coupled between one input of the receiver and the load, a second resistor coupled between the one input and one output of the driver, a third resistor coupled between the other input of the receiver and the load, and a fourth resistor coupled between the other input and the other output of the driver [Figs. 1, 5].

Regarding claim 9, since Thilenius teaches using first, second, third and fourth resistances [Figs. 1, 5], it would have been obvious to a person

of ordinary skill in the art , at the time the invention was made, to assign any values including the values, wherein the first and third resistor are equal and the second and fourth resistor are equal, as a matter of design choice.

Claim 10 is also rejected for the reasons stated in claim 9 above.

10. Claims 2, 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart as applied to claims 1 and 3 above, and further in view of Thilenius [US 20030031139 A1]..

Regarding claim 4, Stewart does not teach expressly using four resistors as claimed.

Thilenius teaches the circuit, wherein the network comprises: a first resistor coupled between one input of the receiver and the load, a second resistor coupled between the one input and one output of the driver, a third resistor coupled between the other input of the receiver and the load, and a

fourth resistor coupled between the other input and the other output of the driver [Figs. 1, 5].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Thilenius with Stewart in order to effectively match line complex impedances.

Regarding claim 2, since Stewart teaches using first and second gain amplifiers (150, 152), it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to assign any values of the gain, wherein a drive and termination impedance of the line driver equals the impedance value of one of the impedances multiplied by  $k$ , wherein  $k$  is a function of the line driver gain and the transconductance amplifier gains, as a matter of design choice.

Claim 5 and 6 are also rejected for the reasons stated in claim 2 above.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Ramnandan Singh/  
Primary Examiner,  
Art Unit 2614